

Appl. No.: 10/811,735
Amdt. dated 10/31/2007
Reply to Office action of 08/20/07

REMARKS/ARGUMENTS

This Amendment is submitted with a Request for Continued Examination. Claims 1-13, 15-19, 21, and 22 are currently pending. As explained more fully below, Applicant has amended independent Claims 1 and 16 for clarification and to further distinguish the cited references. Therefore, in light of the amended claims and subsequent remarks, Applicant respectfully requests reconsideration and allowance of the claims.

Rejection under 35 U.S.C. §112, ¶ 2

In Applicant's previous response, independent Claims 1 and 16 were amended to recite that the wing member is pivotable by the wing actuator from a stationary position substantially aligned with the fuselage member during an initial stage of flight while the engine is not initiated. The Examiner finds that "initial stage of flight" is non-enabling under §112, first paragraph. For clarification Applicant has amended Claims 1 and 16 to recite that the wing member is aligned with the fuselage member at less than transonic speed during flight. Therefore, Applicant respectfully submits that Claims 1-13, 15-19, 21, and 22 are enabling under §112, first paragraph.

Rejection under 35 U.S.C. § 102(b)

In the Office Action, the Examiner rejects Claims 1, 2, 4-6, 9, 10, 16, 17, 19, 21, and 22 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,031,857 to MacConochie et al. MacConochie discloses a two-stage earth-to-orbit transport having translating oblique wings for booster recovery. In particular, the transport includes an orbiter and a pair of boosters. Each of the boosters includes a deployable oblique wing that may pivot from a position aligned along the longitudinal axis of the booster to an oblique position during supersonic and hypersonic speeds.

Independent Claim 1 has been amended to recite that the wing member is pivotable by the wing actuator from a stationary position substantially aligned with the fuselage member at less than transonic speed during flight while the engine is not initiated to a predetermined sweep angle of less than 90 degrees at transonic speed during flight. Independent Claim 16 has been

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similarly amended. Thus, in an initial stage of flight, the wing is in a stationary position aligned with the fuselage, and after the missile obtains transonic speed, the oblique wing may be pivoted to a predetermined sweep angle.

In contrast to Claims 1 and 16, MacConochie does not teach or suggest that the boosters are initiated after transonic speeds are reached. In fact, the boosters are employed to thrust the orbiter vehicle to high speed before being released, which is typical of two-stage transporters. Thus, the boosters of MacConochie are used to thrust the orbiter vehicle to supersonic and hypersonic speeds, while the wing is used to facilitate takeoff and recovery of the booster after the booster has been separated from the orbiter vehicle. For example, MacConochie discloses that the translating, rotating oblique wing is used for booster recovery by minimizing drag during the glide flight back to the launch area (col. 2, lines 1-13; col. 3, lines 42-48). Thus, MacConochie operates in an opposite manner than that of the claimed invention, as the booster is first thrust to supersonic or hypersonic speed with the wing aligned with the booster's fuselage and once released from the orbiter vehicle, the booster glides back to the launch area with its wing in an oblique position.

As a result, Applicant submits that the rejection of Claims 1 and 16 under §102(b) is overcome as MacConochie does not disclose a wing member that is pivotable from a stationary position substantially aligned with the fuselage member at less than transonic speed during flight while the engine is not initiated to a predetermined sweep angle of less than 90 degrees at transonic speed during flight. Because dependent Claims 2, 4-7, 9, 10, 17, 19, 21, and 22 each include recitations of independent Claims 1 and 16, respectively, Applicant submits that each of the dependent claims is distinguishable from the cited references for at least the same reasons applicable to the independent claims.

Rejection under 35 U.S.C. § 103(a)

The Examiner also rejects Claims 1, 2, 4-6, 8-10, 16, 17, 19, 21, and 22 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,842,218 to Groutage in view of U.S. Patent No. 5,992,796 to Smith. The Examiner further rejects several of the dependent claims under 35 U.S.C. §103(a) over a combination of Groutage, Smith, and other secondary sources. Groutage discloses a cruise missile having a single moveable wing. The moveable wing is positionable

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between a captive carry position, where the wing is aligned with the longitudinal axis of the missile's fuselage, and an extended free flight position, where the wing is substantially perpendicular to the missile's fuselage. Smith discloses a secondary wing system for an aircraft that includes an oblique wing that is pivotable between a stowed position and various oblique angles.

As noted above, independent Claims 1 and 16 have been amended to recite a wing member that is pivotable by the wing actuator from a stationary position substantially aligned with the fuselage member at less than transonic speed during flight while the engine is not initiated to a predetermined sweep angle of less than 90 degrees at transonic speed during flight. Applicant respectfully disagrees that the combination of Groutage and Smith discloses the claimed invention, as Groutage only discloses pivoting the wing 90 degrees rather than to an oblique angle. Groutage also does not disclose at what speed the wing is pivoted such that there is no suggestion that pivoting of the wing occurs only after transonic speed is reached. The fact that Groutage only discloses that the wing is pivoted to a 90-degree position suggests that the missile only obtains subsonic speed. Furthermore, Smith distinguishes Groutage such there is no suggestion to modify Groutage to pivot the wing to an angle less than 90 degrees. In this regard, Smith discloses that among other drawbacks, Groutage is unsuitable for use as a "secondary" wing, which is unlike Smith's secondary wing or canard (20). Moreover, an oblique wing is typically only utilized at higher speeds (i.e., speeds greater than subsonic speed), which is not taught or suggested by Groutage.

Even if Groutage and Smith were combined, the combination does not teach or suggest Claims 1 and 16. In this regard, Groutage does not teach or suggest that the missile is capable of obtaining transonic speed. The Examiner relies on a portion of Groutage that generally discloses that a bomb rack may carry cruise missiles of various types to find that cruise missiles are allegedly capable of obtaining supersonic speed. However, Groutage does not teach or suggest that the missile is capable of obtaining transonic speed, and Applicant respectfully requests the Examiner to provide evidentiary support of the assertion that the cruise missiles disclosed by Groutage are capable of obtaining transonic speed. Groutage only generally discloses an engine area (30) and a fuel area (32), but does not disclose when the engine is initiated or at what speed the engine is initiated. Moreover, Groutage nowhere teaches or suggests that the wing is pivoted

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from a stationary position substantially aligned with the fuselage member *at less than transonic speed* during flight *while the engine is not initiated* to a predetermined sweep angle of less than 90 degrees *at transonic speed* during flight, as recited by the claimed invention. Smith fails to overcome Groutage's shortcomings, as Smith only discloses that the secondary wing is pivoted as the aircraft changes speeds, but does not teach or suggest that the secondary wing is aligned with the fuselage at less than transonic speed during flight while the engine is not initiated and/or that the secondary wing is pivoted to an oblique position when transonic speed is reached.

Therefore, Applicant respectfully submits that the rejection of Claims 1 and 16 under 35 U.S.C. §103(a) as being unpatentable over Groutage in view of Smith is overcome. Furthermore, because the dependent claims include each of the recitations of a respective independent claim, Applicant submits that each of the dependent claims is distinguishable from both Chen and Abell for at least the same reasons discussed above with respect to independent Claims 1 and 16.

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CONCLUSION

In view of the amended claims and remarks presented above, it is respectfully submitted that all of the present claims of the present application are in condition for immediate allowance. It is therefore respectfully requested that a Notice of Allowance be issued. The Examiner is encouraged to contact Applicant's undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



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